



# Biological\_control\_Products available

**PEST MANAGEMENT :**  
**BIOLOGICAL CONTROL**



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# Predators



# Our friend *Mantis religiosa*



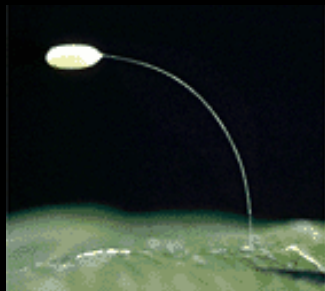
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# Predators

eggs



Larvae



Adults



A good example of the role of natural enemies or 'beneficials' is in the control of aphids in cereals and in orchards.

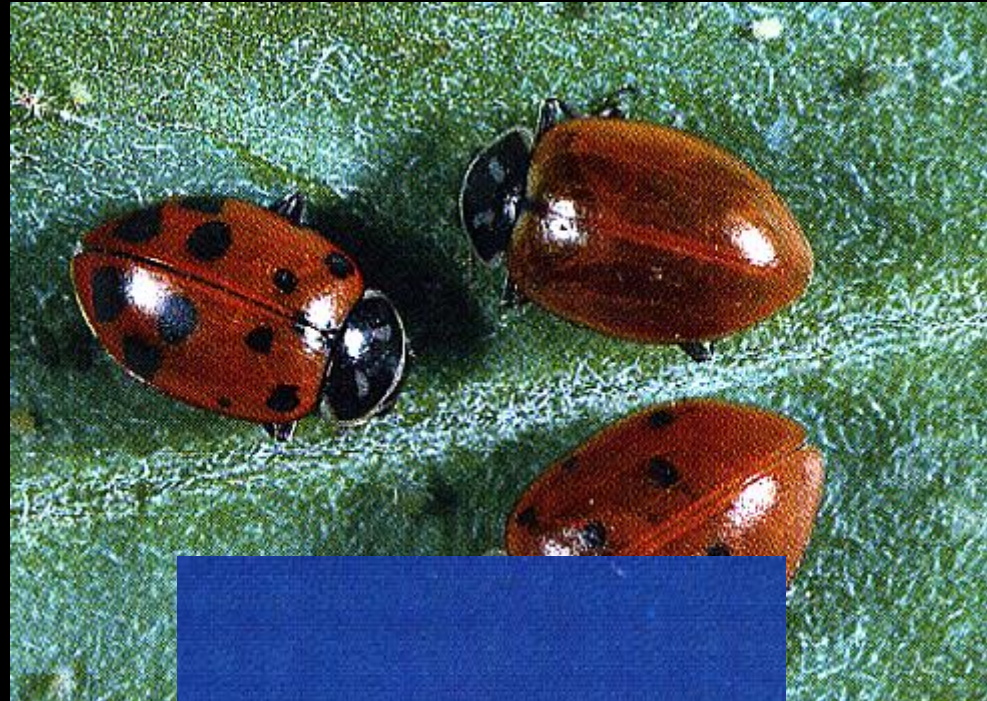




# *Hippodamia convergens* (Coleoptera, Coccinellidae)



Each adult can consume 5000 aphids

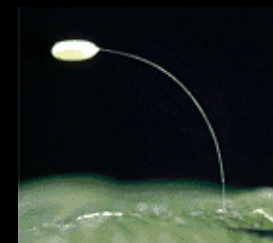




*Coccinella septempunctata* (Coleoptera, Coccinellidae)



*Chrysopa carnea*, *Chrysoperla agilis*  
(Neuroptera, Chrysopidae)



Τρέφονται με Αφίδες, κοκκοειδή,  
ακάρεα, θρίπες





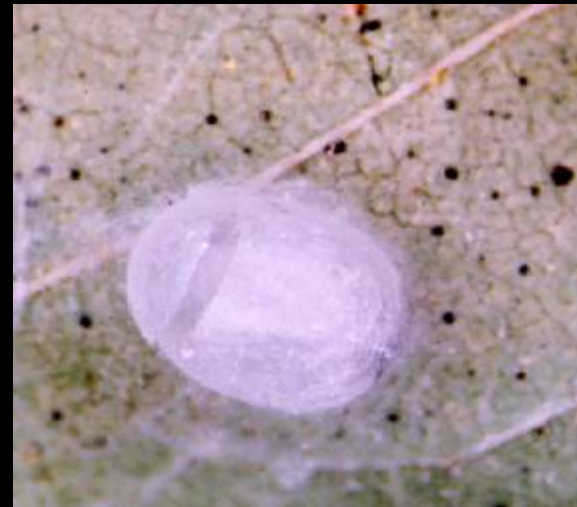
*Chrysopa carnea*, *Chrysoperla agilis*  
(Neuroptera, Chrysopidae)



pupa



coccon

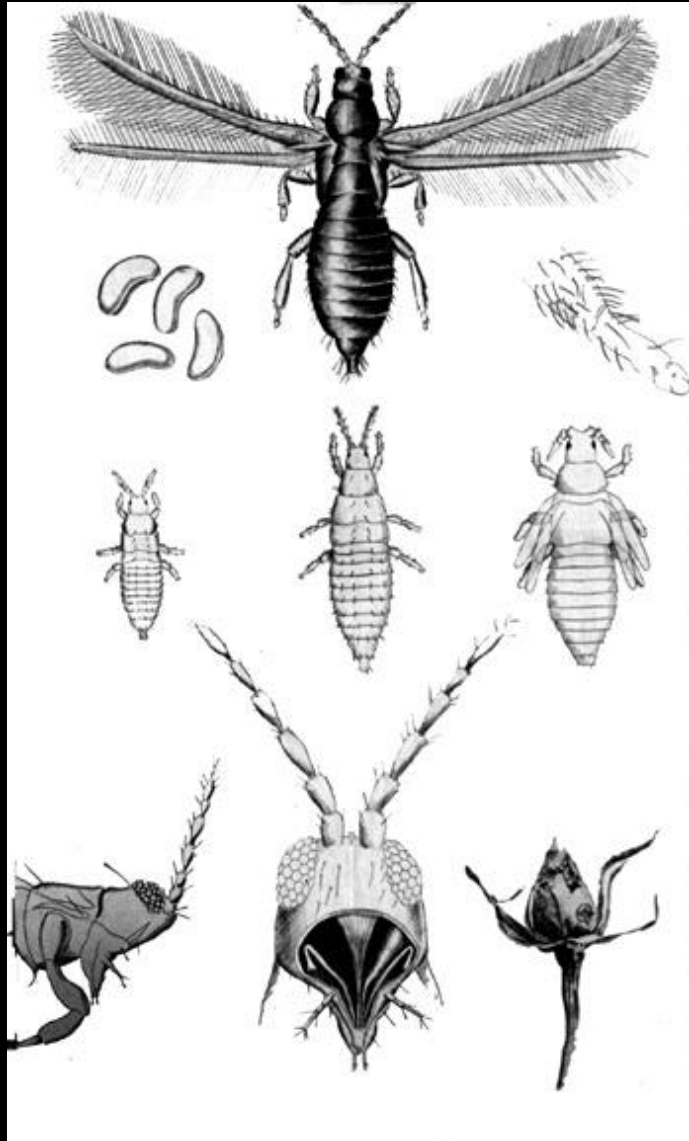




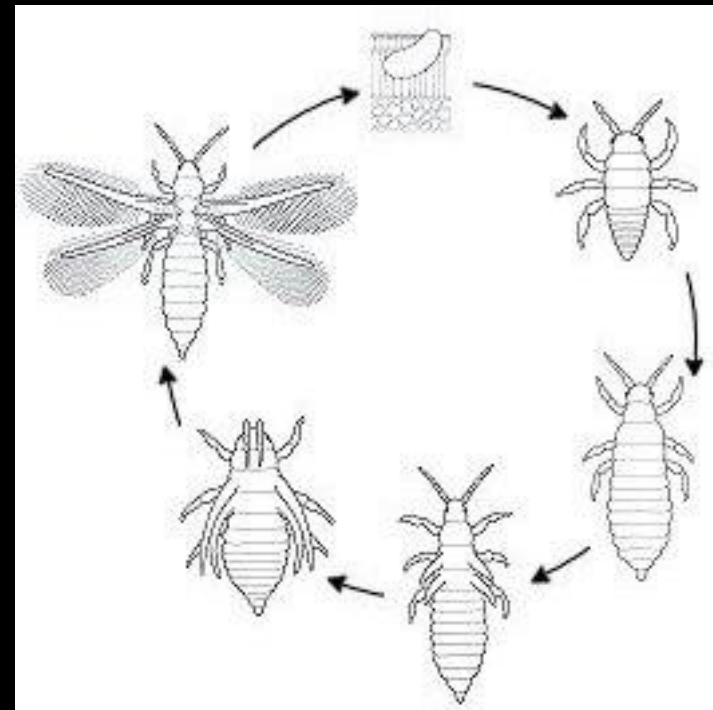
predator *APHIDOLETES APHIDIMYZA*



# Natural enemies of thrips



## Life cycle of thrips





## Predators of Genus *Orius*

Natural enemies of thrips,  
aphids, white flies

Adult



Larva





# Natural enemies of thrips

*Amblyseius cucumeris* και *Amblyseius barkeri*

Predator mites of family Phytoseiidae





# PARASITOIDS

## Parasitoids adults



## Parasitized aphids





# Pests of Vegetables



*Trialeurodes  
vaporariorum*



*Frankliniella  
occidentalis*



*Liriomyza trifolii*



*Aphididae*



*Tetranychus urticae*

# Trialeuroides vaporariorum



Aubergine  
Cucumber  
Pepper  
Tomato

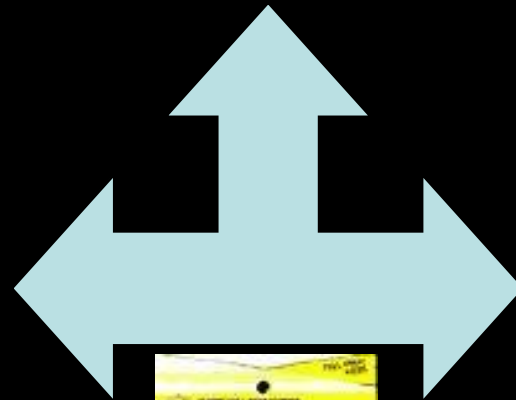
Damage :  
Suck of juice

Transmission of viruses -  
bacteria

# Trialeuroides vaporariorum



*Encarsia formosa*





# *Encarsia formosa* (parasitoid Hymenoptera)



# Liriomyza trifolii



# *Liriomyza trifolii* (παράσιτα)



*Diglyphus isaea*  
(Hym. - Halcidoidea)

Lay 2-5 eggs in the body  
of larvae



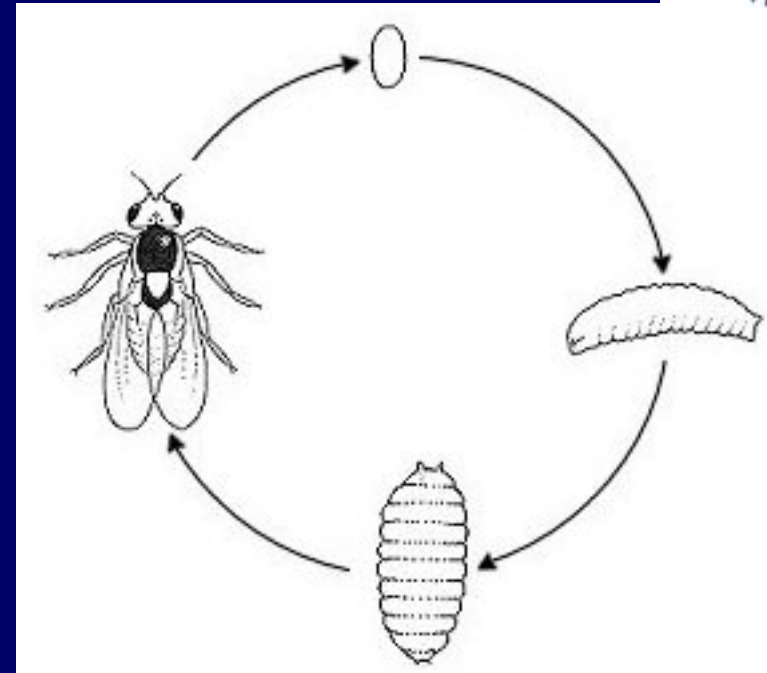
*Dacnusa sibirica*  
(B. Ευρώπη)



# Leafminers and their natural enemies



## *Lyriomyza trifolii* Life cycle

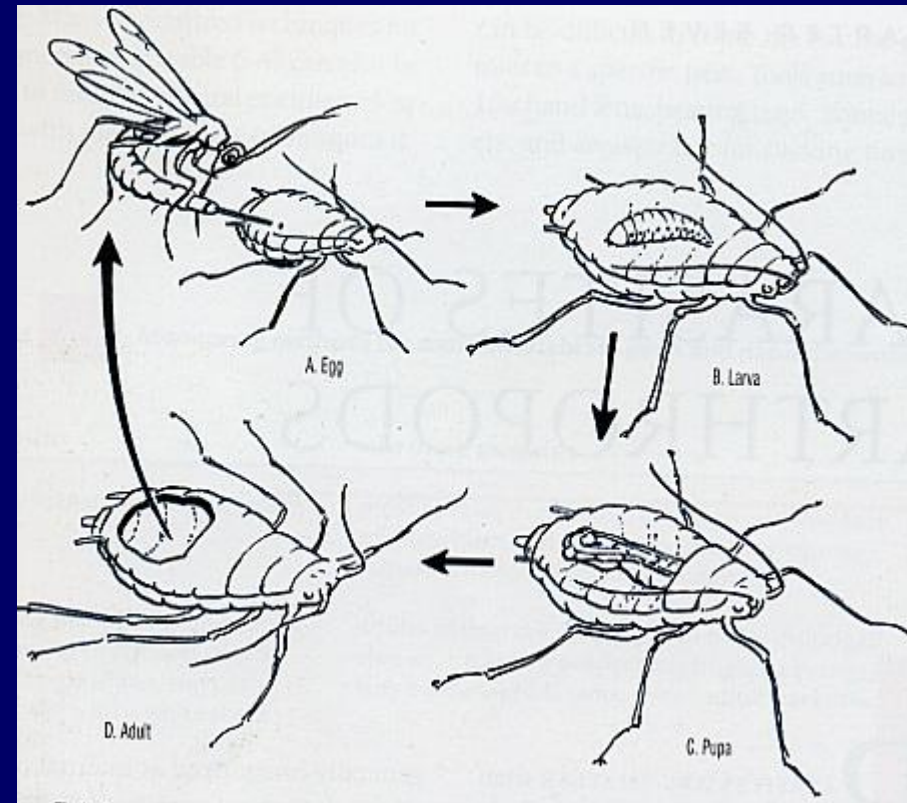


Endoparasites *Dacnusa sibirica* (Hymenoptera, Braconidae)

# Parasitoids of Aphids

Hymenoptera of family Aphidiidae

Genus *Aphidius*

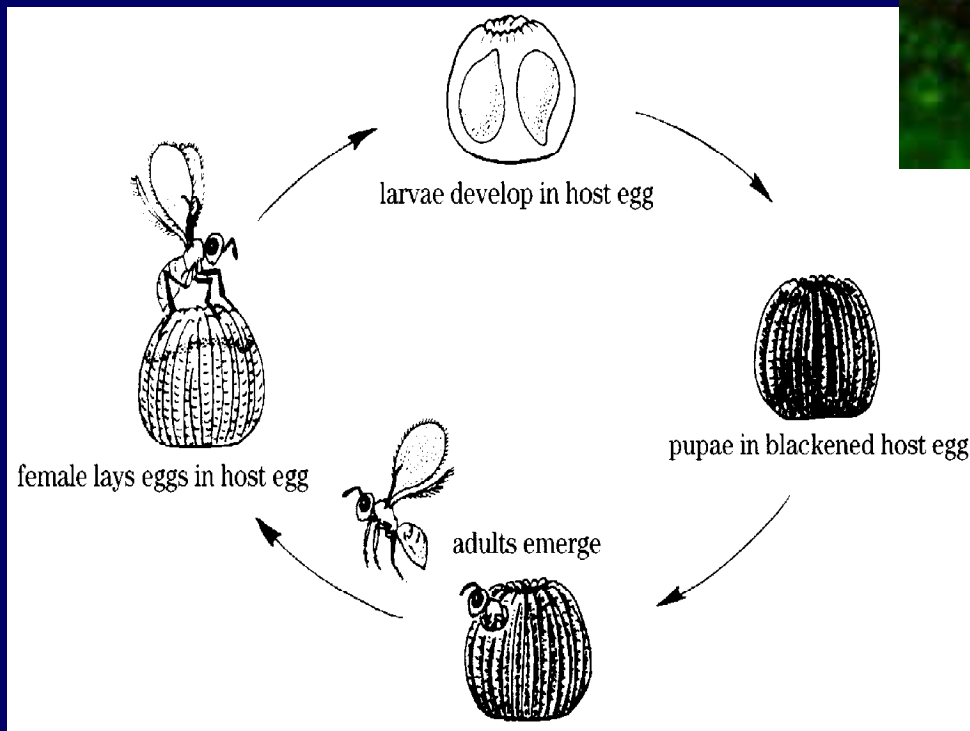






# parasites *Trichogramma* (Hymenoptera) *Egg parasites of Lepidoptera*

*Ostrinia*  
*Carpocapsa*  
*Heliothis,*



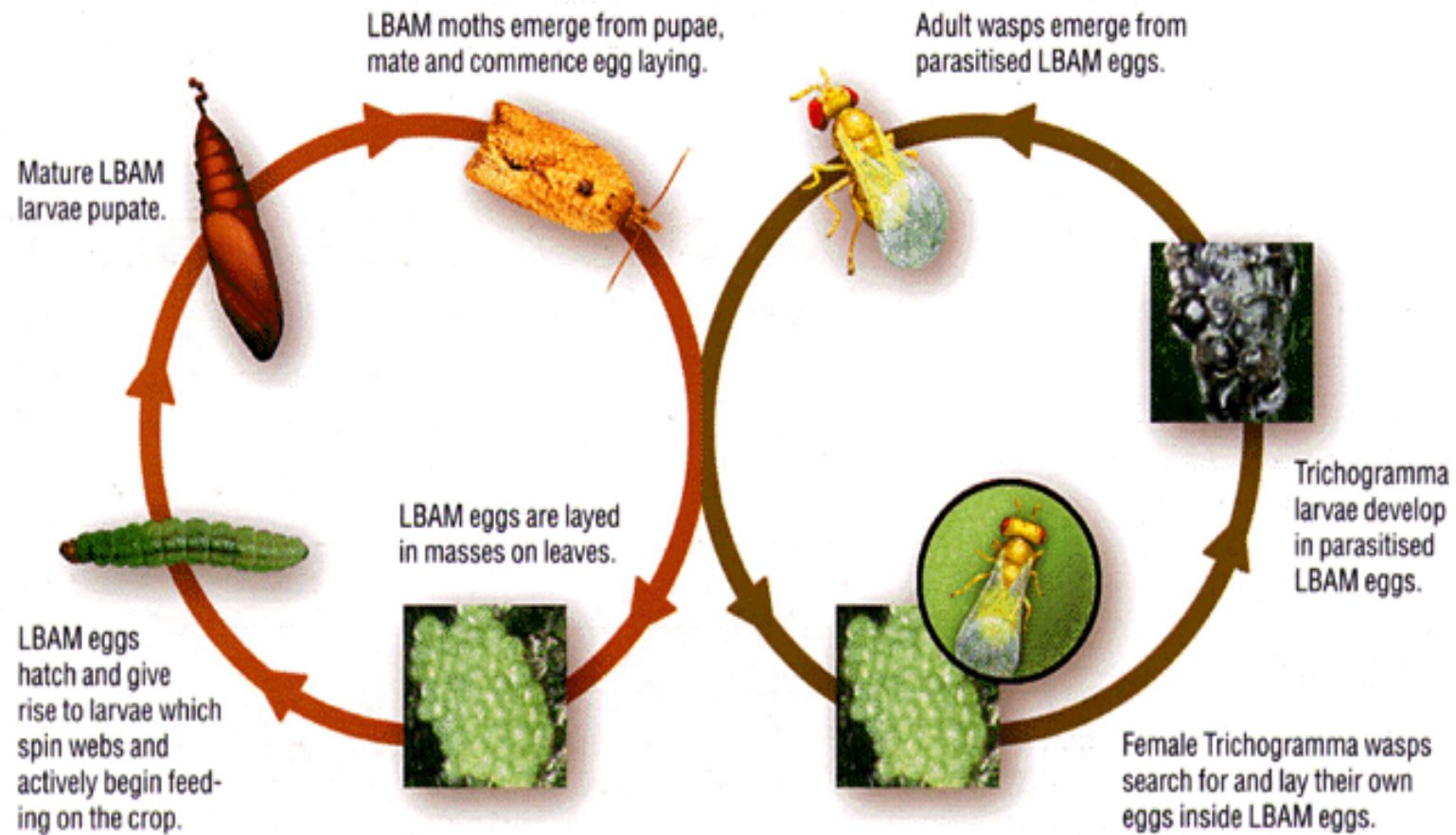
# capsules with parasitised lepidopteran larvae by *Trichogramma*



# Life cycle of parasitoids Trichogramma

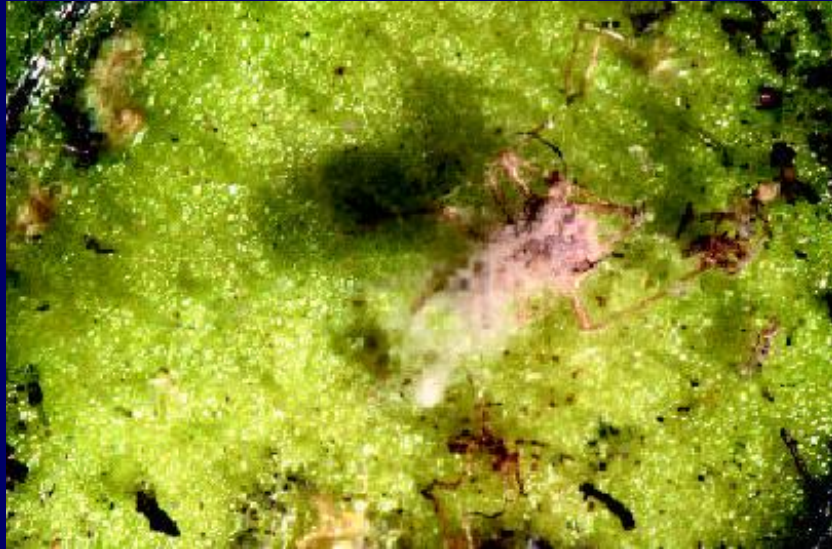


## How Trichogramma Intercepts the Lifecycle of Lightbrown Apple Moth





# Entomopathogens fungi



*VERTICILLIUM LECANII*

aphids and white fly

Fungicides can kill  
Vericillium



# *VERTICILLIUM LECANII*



## *Aphids infected by VERTICILLIUM LECANII*

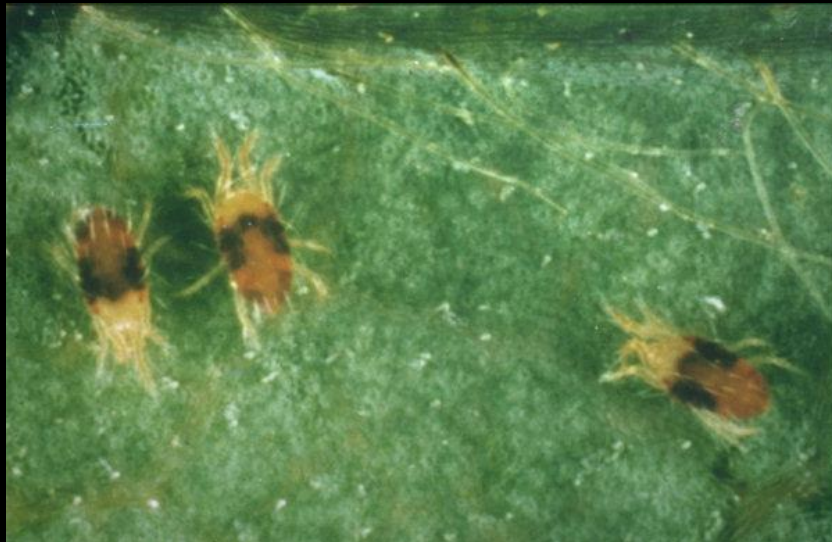


**Fig. 3.** Particolare della sporulazione di *V. lecanii* su afide attaccato dal fungo

*Figure 3. Detail of sporulation of V. lecanii on an aphid attacked by the fungus*



# Tetranychus urticae





# Predator mite *Phytoseiulus persimilis*



# Predator mite *Amblyseius californicus*



# *Tetranychus urticae* (βιολογική καταπολέμηση)

## *Phytoseiulus persimilis*

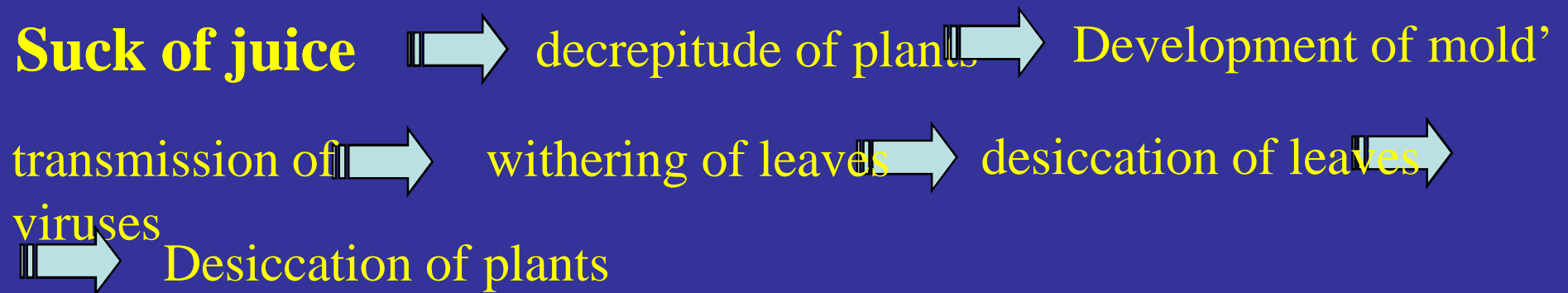


- temperature ( $> 20\text{ C}$ )
- Humidity ( $> 60\%$ )





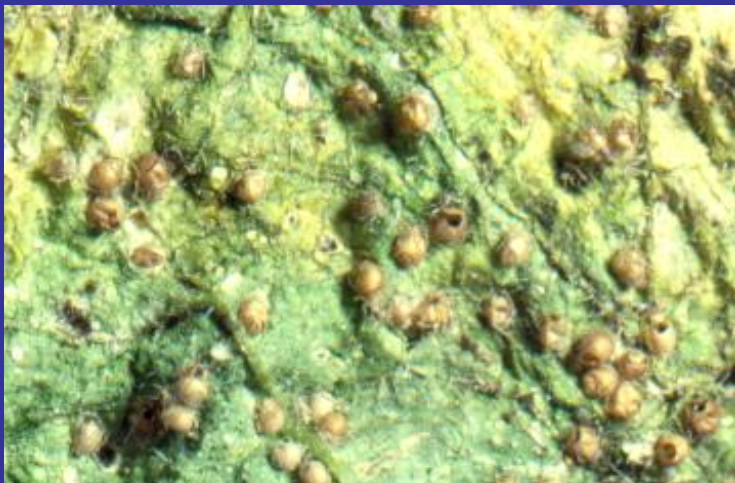
# Aphididae



# Aphididae



*Aphidoletes aphidimyza*  
(Diptera – Cecidomyiidae)



# Aphididae



*Aphidius matricariae*  
(Hem.-Homoptera)



# Frankliniella occidentalis



Peper (flowers-fruits)

Cucumber (flowers-fruits)

# Biological Control

Frankliniella  
occidentalis



Amblyseius cucumeris



Orius sp.

